

PATENT SPECIFICATION

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(54) METHOD AND APPARATUS FOR CUTTING CARPET TILES

(71) We, SIDLAW INDUSTRIES LIMITED, a British Company, of Meadowplace Buildings, Dundee, Great Britain, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to a method of and apparatus for cutting carpet tiles.

At present carpet tiles are generally cut from lengths of carpet by cutting the carpet into strips of a predetermined width equal to that of the desired tile and by cutting the strips at predetermined points along the strips to obtain the final dimension of tile. By cutting in this manner every line of cut forms the edges of two tiles on opposite sides of the cutting blade. Such known methods have the serious disadvantage of producing carpet tiles which are dimensionally irregular.

Moreover, such known methods of cutting carpet tiles has a further disadvantage in that both the carpet backing and the pile are cut. Thus, when the tiles are laid the join between adjacent tiles is immediately apparent.

An object of the present invention is to provide a method of cutting carpet tiles which obviates or mitigates the aforementioned disadvantages, and to provide apparatus for carrying out the method.

According to the present invention there is provided a method of cutting carpet tiles comprising holding a pelt of carpeting on a base plate with the pile on the plate and cutting the backing of the pelt round the entire periphery of the tile while the pelt is held on the base plate.

Preferably, the backing of the carpeting is cut without cutting the pile.

Preferably also, said base plate is resiliently supported.

Further according to the present invention there is provided apparatus for carry-

ing out the aforesaid method and comprising a resiliently-supported base plate, a presser plate actuatable to press a pelt of carpeting on to said base plate and cutters actuatable when said pelt is held on said base plate to cut round the entire periphery of a carpet tile.

Preferably also, said presser plate is substantially the same shape as the desired shape of the carpet tile.

Preferably also, said cutter is in the form of a die-stamp.

Preferably also, the die-stamp is substantially rectangular.

Further according to the present invention there is provided a carpet tile cut by the method aforesaid.

An embodiment of the present invention will now be described, by way of example, with reference to the accompanying drawings in which:

Fig. 1 is a front view of apparatus according to the present invention; and

Fig. 2 is a front view of one edge of a carpet tile.

In the method according to the invention a pelt 1 of carpeting having a pile and a backing of, for example, P.V.C., is laid on to a base plate 2 with the pile downwards. A presser plate 3 is applied to the backing of the pelt so as to press the pelt firmly against the base plate 2. With the pelt thus held die stamp cutters 4 are applied to the backing of the pelt so as to cut through the backing only and so as to cut round the entire periphery of the carpet tile.

By cutting in the above manner only one side of a line of cut forms an edge of a carpet tile, the other side being discarded as waste. A plurality of carpet tiles may be cut from a single pelt by applying a corresponding number of cutters to the pelt always providing that a strip of waste is left between adjacent tiles so that only one side of any line of cut forms an edge of a carpet tile.

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The presser plate 3 is substantially the same shape as the desired shape of carpet tile so that the maximum area of pelt is held firmly on the base plate. In the apparatus shown in Fig. 1 of the drawings the presser plate 3 is reciprocated in the direction shown by the arrow A in timed relation to reciprocation of the cutters 4 in the same direction, the presser plate 3 being provided with a predetermined amount of lost motion to allow the cutters to overtake the presser plate and cut into the backing of the pelt.

Cutters are adjusted so that only the backing of the pelt is cut thereby leaving a fringe of pile 5 (Fig. 2) around each of the cut tiles 6. Thus, when adjacent carpet tiles are laid the fringes of pile intermesh so as to make the joins less apparent.

To facilitate adjustment of the cutters so that the backing only is cut and in order to avoid jamming of the apparatus the base plate 2 is supported on a frame 7 through an intermediate layer of resilient material 8. It has been found by experiment that the most suitable resilient material is single-skinned Neoprene.

In a modified embodiment of the invention, there is provided means for preventing the tile from slipping while cutting of the backing is taking place, and comprising providing the base plate 2 and/or the presser plate 3 with an abrasive surface.

In a further modified embodiment of the method according to the invention, steps are taken to ensure that the pile at the edges of a tile does not become extensively damaged during cutting of the backing. The steps, comprising brushing the pile in one direction, placing the tile on an abrasive surfaced base plate 2, with the pile adjacent the base plate 2, and pushing the backing of the tile across the abrasive plate 2 in a direction substantially the same as the direction in which the pile lies after brushing, so as to substantially reverse the direction of the pile, whereupon cutting of the backing is performed, the act of reversing the direction of the pile allows cutting of the backing to occur without seriously damaging the pile, and when the pile is removed from the cutting machine, the pile tends to revert to its original configuration, thus overlapping the edges of the backing, such that a good interlock of the pile of adjacent tiles may be obtained.

Both the aforementioned modifications are particularly beneficial when cutting tiles from long piled carpeting.

WHAT WE CLAIM IS:—

1. A method of cutting carpet tiles comprising holding a pelt of carpeting on a base plate with the pile on the plate and cutting the backing of the pelt round the

entire periphery of the tile while the pelt is held on the base plate.

2. A method as claimed in claim 1, in which the backing of the carpeting is cut without cutting the pile.

3. A method as claimed in claim 1 or 2, in which said base plate is resiliently supported.

4. A method as claimed in claim 2, in which the cutting means is applied initially to the backing of the pelt.

5. A method as claimed in any preceding claim, in which the entire periphery of the tile is cut simultaneously.

6. A method as claimed on any preceding claim in which the tile is substantially rectangular.

7. A method as claimed in any preceding claim in which the backing of the pelt is formed from P.V.C.

8. A method as claimed in any preceding claim, in which a plurality of tiles is cut from each pelt.

9. A method of cutting carpet tiles substantially as hereinbefore described.

10. Apparatus for carrying out the method claimed in any preceding claim and comprising a resiliently-supported base plate, a presser plate actuatable to press a pelt of carpeting on to said base plate and cutters actuatable when said pelt is held on said base plate to cut round the entire periphery of a carpet tile.

11. Apparatus as claimed in claim 10, in which said presser plate is substantially the same shape as the desired shape of the carpet tile.

12. Apparatus as claimed in claim 10 or claim 11, in which said cutter is in the form of a die-stamp.

13. Apparatus as claimed in claim 12, in which the die-stamp is substantially rectangular.

14. Apparatus as claimed in claim 10, in which the resilient support is provided by single skinned Neoprene.

15. Apparatus as claimed in any one of claims 10 to 15 in which the base plate and/or the presser plate is provided with an abrasive coating.

16. Apparatus for cutting carpet tiles substantially as hereinbefore described with reference to the accompanying drawings.

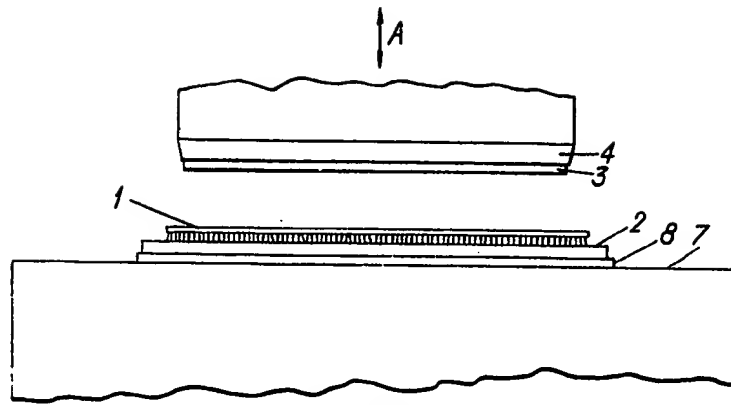
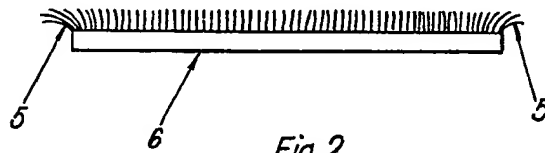
17. A carpet tile cut by the method claimed in any one of claims 1 to 9.

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*Fig. 1.**Fig. 2.*